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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/676,714	09/29/2000	William J. Rooney	POU920000130US1	2786

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EXAMINER

CHEN, ALAN S

ART UNIT PAPER NUMBER

2182

DATE MAILED: 11/29/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

## Office Action Summary

Application No.

09/676,714

Applicant(s)

ROONEY ET AL.

Examiner

Alan S Chen

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
  - If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
  - If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
  - Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133).
- Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 09/29/2000.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-48 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1, 10-12, 15, 16, 25-27, 30-34, 43-45 and 48 is/are rejected.
- 7) ☒ Claim(s) 2-9, 13, 14, 17-24, 28, 29, 35-42, 46 and 47 is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 September 2000 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)  
Paper No(s)/Mail Date \_\_\_\_\_
- ☐ Interview Summary (PTO-413)  
Paper No(s)/Mail Date. \_\_\_\_\_
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: \_\_\_\_\_

## **DETAILED ACTION**

### ***Claim Rejections - 35 USC § 112***

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 31-33 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.
3. In claim 31, Applicant claims two separate processors, only to clarify in claims 32 and 33 that they can be either separate or the same processor. Examiner regards claim 31 as referring to only one processor in this office action
4. Claims 32 and 33 are rejected based on being dependent upon a rejected base claim.

### ***Claim Rejections - 35 USC § 102***

5. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

6. Claims 1,10-12,15,16,25-27,30,31,32,34,43-45 and 48 are rejected under 35 U.S.C. 102(e) as being anticipated by No. 6,067,412 to Blake et al. (hereafter Blake).
7. As per claims 1, 16, 31, 32 and 34, Blake discloses a method and system of determining whether I/O constraints exist for controllers of a computing environment (see Summary of

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Invention, actual measured performance marks on a system is compared to predicted performance marks, whereupon system resource bottleneck/constraint, e.g., an I/O device like a hard disk, Column 2, lines 1-15, is determined) where program of instructions to determine whether constraints exist is stored a program storage device (Fig. 2, elements 211, 212 are inherently stored on hard drive, e.g., Microsoft OS resides on the primary hard disk), said system and method comprising: determining an I/O velocity for a controller of said computing environment (Column 3, lines 50-60 and Table 2 in Columns 9 and 10 show various controllers where performance, e.g., I/O velocity, is measured; for instance, the disk controller or network adapter); and using said I/O velocity to determine whether an I/O constraint exists for said controller (Column 2, lines 55-65, whereupon the bottleneck is determined; Column 4, lines 62 thru Column 5, lines 5). A processor is used to compute performance measurement and bottleneck (Fig. 3, element 302A).

8. As per claims 10, 25 and 43, Blake discloses the method and system of claims 1, 16 and 34, wherein said means for using comprises means for comparing I/O velocity to a target I/O velocity (Column 2, lines 50-65, predicted performance measurements are target velocities that most closely matches the actual velocities), wherein said I/O constraint exists when said I/O velocity is not within a tolerance of said target I/O velocity (bottleneck is found based on closest match between predicted and actual, hence an inherent tolerance exists based on the degree of the match that yields the most significant bottleneck/resource constraint; for instance if the match is not close enough, another resource would be deemed the bottleneck).

9. As per claims 11, 12, 26, 27, 44 and 45, Blake discloses the method and system of claims 1, 16 and 34, wherein said controller comprises a control unit (disk controller inherently has a

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control unit to control rate of reading and writing by disk head onto disk platters) and said I/O constraint comprises a lack of communication bandwidth (as show in Table 4 in Column 13, bandwidth is the performance measurement, used to judge where bottleneck exists). Note, rate is calculated by the processor, so the bandwidth is what is seen looking in out of the processor, which includes the bus, e.g., channel.

10. As per claims 15, 30 and 48, the controller comprises a single device (the disk controller in Table Two is construed to be one device, e.g., on functional device that read and writes data to and from disk).

***Allowable Subject Matter***

11. Claim 33 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

The following is the statement of reasons for the indication of allowable subject matter:

The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, a system of determining whether I/O constraints exist for controllers of a computing environment, said system comprising: a first processor to determine an I/O velocity and a second processor to determine I/O constraint based on said I/O velocity, where the two processors are separate.

12. Claims 2-9,13,14,17-24,28,29,35-42,46 and 47 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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As per claims 2-9, 17-24, 35-42, the following is the statement of reasons for the indication of allowable subject matter: The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, a I/O Velocity equation as recited in the claims 2, 17 and 35 incorporating parameters of device connect times, pending times, control unit busy times, and device busy times.

As per claims 13,14,28,29,46 and 47, the following is the statement of reasons for the indication of allowable subject matter: The prior art disclosed by the applicant and cited by the Examiner fail to teach or suggest, alone or in combination, determining I/O velocity as recited in the claims 1, 16 and 34, comprising employing a relationship between an amount of time waiting to use one or more resources of the controller and an amount of time using the one or more resources.

### ***Conclusion***

13. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

The following patents are cited to further show the state of the art with respect to determining delay in I/O devices:

U.S. Pat. No. 5,473,773 to Aman et al.

U.S. Pat. No. 5,881,238 to Aman et al.

U.S. Pat. No. 5,913,073 to LeCrone

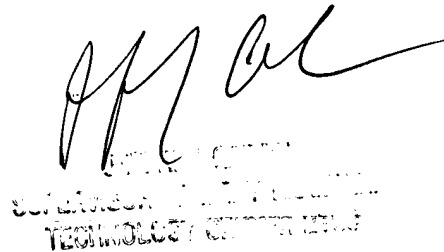
14. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Alan S Chen whose telephone number is 571-272-4143. The examiner can normally be reached on M-F 8:30am - 5:30pm.

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If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jeffrey A Gaffin can be reached on (571) 272-4146. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

ASC  
11/12/2004



The block contains a handwritten signature in black ink, which appears to be 'J. A. Gaffin'. Below the signature is a rectangular official stamp. The stamp contains the text 'UNITED STATES PATENT AND TRADEMARK OFFICE' and 'TECHNOLOGY CENTER' in a stylized, bold font.